



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/799,126

03/11/2004

Rizal Jaffar

70040126-1

7062

57299

7590

02/08/2006

AVAGO TECHNOLOGIES, LTD.

P.O. BOX 1920

DENVER, CO 80201-1920

EXAMINER

PYO, KEVIN K

ART UNIT

PAPER NUMBER

2878

DATE MAILED: 02/08/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Cell.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/799,126	JAFFAR ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Kevin Pyo	2878	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 27 January 2006.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 4-6, 10, 11 and 13-17 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 4-6, 10, 11 and 13-17 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)             | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                                    |

***Claim Rejections - 35 USC § 112***

1. Claims 10 and 11 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The new added limitations in claim 10 constitute new matter since there is no support in the original disclosure for these claimed limitations. More specifically, in spite of applicant's statement that support for these new added features can be found in the original disclosure, the claimed subject matter (i.e. comparing the sawtooth wave to the voltage without inverting the voltage representing the select range of wavelengths of visible light to produce a digital pulse width modulated output, wherein the steps of converting the current, generating and comparing are accomplished in a single integrated circuit) were not described in the original disclosure and therefore constitute new matter.

***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 4-6, 10 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Doberenz (6,664,556) in view of Nishiyama (5,016,046).

Regarding claim 4, Doberenz shows in Fig.1 a photodetector (LQ402) for generating a voltage output signal, a sawtooth generator (18) for producing a sawtooth wave, and a comparator (U401, U402) for comparing the sawtooth wave with the output signal of the photodetector and producing a pulse width modulated digital output (see abstract). Although Doberenz differs from the claimed invention in that it utilizes a phototransistor for producing a voltage signal, it is notoriously well known in the art to utilize a transimpedance amplifier with a photodiode in an optical receiver as shown in Nishiyama (Fig.3) to generate an amplified voltage signal. It would have been obvious to one of ordinary skill in the art to modify the device of Doberenz by replacing the phototransistor with a transimpedance amplifier and a photodiode of Nishiyama in view of amplifying the signal from a photodetector into a relatively large amplitude voltage signal and providing such a voltage signal to the comparator (U401). When the phototransistor shown in Doberenz is replaced by a photodiode with a transimpedance amplifier, the comparator of Doberenz would be directly coupled to a transimpedance amplifier.

Regarding claims 5 and 10, Nishiyama discloses in col.2, lines 38-40 the sensors utilized in the device of Nishiyama are photodiodes capable of measuring quantity of light of a wavelength of 400 to 800 nm (visible light). It would have been obvious to one of ordinary skill in the art to utilize an optical filter with a photodiode of Nishiyama in view of the desire to isolate a particular wavelength of light to be measured. Regarding claim 10, it would have been obvious to one of ordinary skill in the art to integrate electrical circuit elements in single integrated circuit in view of the desire to reduce the size of a device. It should be noted that when the photodetector of Doberenz is replaced with a photodiode and a transimpedance

Art Unit: 2878

amplifier, the step of inverting a voltage outputted from a transimpedance amplifier is not required before the voltage is transmitted to the comparator of Doberenz.

Regarding claim 6, although Nishiyama shows in Fig.1 the use of a single converter unit (3, 4, 7), it would have been obvious to one of ordinary skill in the art to utilize a plurality of converter units in Nishiyama in view of the desire to detect light beams reflected from plural locations of the original face (2a in Fig.5). Synchronization of such a plurality of converter units to a common signal would have been obvious to one of ordinary skill in the art in view of the desire to reduce the influence of pulsing of the common fluorescent lamp upon all such individual sensors.

Regarding claim 11, the limitation therein is disclosed in col.2, lines 44-46 of Doberenz.

4. Claims 13-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Doberenz in view of Nishiyama and Richard et al (6,894,266).


Regarding claims 13-17, although the device of Doberenz in view of Nishiyama does not specifically mention that its electrical circuit elements are integrated into a common package comprising a plurality of pins, it is well known in the art to integrate electrical circuit elements in a common package as taught by Richard et al and it would have been obvious to one of ordinary skill in the art to place circuit elements of Doberenz in view of Nishiyama in view of reducing the size of a device as well as the manufacturing cost. The intended use of a pin would have been obvious to one of ordinary skill in the art in view of meeting different design requirements and achieving the particular desired performance.

Art Unit: 2878

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin Pyo whose telephone number is (571) 272-2445. The examiner can normally be reached on Mon-Fri (with flexible hour), First Mon. off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Georgia Y. Epps can be reached on (571) 272-2328. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Kevin Pyo  
Primary Examiner  
Art Unit 2878

Pkk  
2/5/06